I CLAIM AS MY INVENTION:

1. A monitor for early detection of an ischemic heart disease, comprising:

an impedance measurement unit, including an electrode arrangement for interacting with a patient to measure an intracardiac impedance and to generate a corresponding impedance signal;

a notch detector connected to said impedance measurement unit which detects an occurrence of a notch in the impedance signal coincident with entry of blood into a ventricle, with a portion of said impedance signal following said notch being a post-notch impedance curve; and

a pattern recognition unit, which compares said post-notch impedance curve with a stored reference impedance curve template to obtain a comparison result and to detect an ischemic heart disease from said comparison result.

2. A monitor as claimed in claim 1 wherein said pattern recognition unit compares a shape of said post-notch impedance curve to a shape of said reference impedance curve template.

3. A monitor as claimed in claim 1 comprising a differentiating unit which calculates a time derivative at least of said post-notch impedance curve, and wherein said pattern recognition unit compares a shape of said time derivative of said post-notch impedance curve with a stored reference time-derivative impedance curve template.

4. A monitor as claimed in claim 1 comprising a calculation unit which calculates, for each cardiac cycle, an ischemic heart disease index ZIHD-index, defined by ZIHD-index = $\Delta Z_1/\Delta Z_2$, wherein ΔZ_1 denotes, for each cardiac cycle, a difference between a maximum value of said impedance signal and an impedance

value measured in a plateau occurring in said impedance signal after said notch, and wherein ΔZ_2 denotes a difference between said impedance value in said plateau and a minimum value of said impedance signal in a region of decreasing impedance following said plateau in said impedance signal, and an analysis unit supplied with the calculated ZIHD-index for detecting an ischemic heart disease from the calculated ZIHD-index.

5. A monitor as claimed in claim 4 wherein said analysis unit includes a comparator which compares an absolute value of ΔZ_1 with a predetermined ΔZ_1 threshold value for detecting an ischemic heart disease.

6. A monitor as claimed in claim 4 wherein said analysis unit includes a comparator which compares an absolute value of ΔZ_2 with a predetermined ΔZ_2 threshold value for detecting an ischemic heart disease.

7. A monitor as claimed in claim 4 wherein said analysis unit includes a comparator which compares an absolute value of ΔZ_1 with a predetermined ΔZ_1 threshold value and an absolute value of ΔZ_2 with a predetermined ΔZ_2 threshold value, for detecting an ischemic heart disease.

8. A monitor as claimed in claim 4 wherein said maximum value used in said calculation unit is a maximum value located, in each cardiac cycle, in said impedance signal before said notch.

9. A monitor as claimed in claim 4 wherein said maximum value used in said calculation unit is a maximum value located, in each cardiac cycle, in said impedance signal after said notch.

10. A monitor as claimed in claim 4 wherein said maximum value used in said calculation unit is an average value of a maximum value in the impedance signal for a cardiac cycle located before said notch, and a maximum value of the impedance signal for that cardiac cycle located after said notch.

11. A monitor as claimed in claim 4 comprising an averaging unit for forming said plateau impedance value as an average value of said impedance signal in a predetermined time window after said notch.

12. A monitor as claimed in claim 11 wherein, in said averaging unit, a beginning of said time window after said notch is selectable.

13. A monitor as claimed in claim 11 wherein, in said averaging unit, said time window begins at a time in a range between 100 and 150 msec following said notch.

14. A monitor as claimed in claim 4 comprising a differentiating unit which forms a time derivative of said impedance signal and which determines a slope of said region of decreasing impedance from said time derivative, and a comparator which compares said slope with a predetermined slope threshold.

15. A monitor as claimed in claim 1 comprising:

a differentiating unit supplied with said impedance signal for calculating a first time derivative of said impedance signal;

a loop generator connected to said impedance measurement unit and to said differentiating unit for plotting impedance values from said impedance signal relative to related values in said first time derivative to form a loop for each cardiac cycle; and

a comparator connected to said loop generator for comparing said loop with a loop template to obtain a comparison result for detecting an ischemic heart disease dependent on said comparison result.

16. A monitor as claimed in claim 15 wherein said comparator compares a shape of said loop in a portion of said loop corresponding to said post-notch impedance curve, with a corresponding portion of said loop template.

17. A monitor as claimed in claim 1 comprising an averaging unit connected to said impedance measuring unit for forming an average impedance signal from a plurality of impedance signals respectively obtained during a predetermined number of cardiac cycles, and wherein said pattern recognition unit is connected to said averaging unit and compares a post-notch impedance curve in said average impedance signal with said reference impedance curve template.

18. A monitor as claimed in claim 1 comprising:

a differentiating unit supplied with said impedance signal that calculates a first time derivative of said impedance signal;

an averaging unit connected to said differentiating unit which forms an average time derivative from a plurality of first time derivatives of respective impedance signals in a predetermined number of cardiac cycles; and

wherein said reference impedance curve template is a reference impedance derivative template, and wherein said pattern recognition unit is connected to said averaging unit and compares the average time derivative of the post-notch impedance curve in said cardiac cycles with a corresponding portion of said reference impedance derivative template.

19. A monitor as claimed in claim 1 comprising:

a first averaging unit supplied with said impedance signal for determining an average impedance signal from a plurality of impedance signals measured during a predetermined number of cardiac cycles;

a differentiating unit supplied with said impedance signals that calculates a first time derivative of said impedance signals in said cardiac cycles;

a second averaging unit connected to said differentiating unit that forms an average time derivative from the respective first time derivatives in said cardiac cycles;

a loop generator connected to said first averaging unit and to said second averaging unit for plotting said average impedance values against related average time derivatives to form an average loop for each cardiac cycle; and

a comparator that compares said average loop with a predetermined loop template to obtain a comparison result for detecting an ischemic heart disease dependent on said comparison result.

20. A monitor as claimed in claim 19 wherein said first and second averaging units are formed by a single averaging unit.

21. A monitor as claimed in claim 1 wherein said electrode arrangement comprises a bipolar ventricular electrode having an electrode tip and a ring, and wherein said impedance measuring unit measures said impedance signal between said electrode tip and said ring.

22. A monitor as claimed in claim 1 comprising a housing containing said impedance measurement unit, said notch detector, and said pattern recognition unit, and wherein said electrode arrangement comprises a unipolar ventricular electrode having an electrode tip, and wherein said impedance measuring unit measures said impedance signal between said electrode tip and said housing.